LISTING OF THE CLAIMS

Claims 1-11 (canceled).

12 (amended): A diffusion bonded metallic catalyst carrier comprising: a honeycomb body composed of a piece of corrugated foil made of heat-resistant stainless steel containing aluminum and a piece of flat foil or corrugated foil made of stainless steel, the piece of corrugated foil and the piece of flat foil or corrugated foil being alternately wound or laminated on each other; and an outer cylinder made of metal into which the honeycomb body is incorporated, the honeycomb body and the outer cylinder being integrated into one body by means of diffusion bonding,

wherein the pieces of foil have a surface roughness in a width direction of the foil after diffusion bonding wherein an arithmetical mean deviation of asserted profile Ra after diffusion bonding is 0.001 to 2.0 μm, and

diffusion bonds forming joint sections between two pieces of foil of the corrugated foil and the flat foil or the corrugated foil with no sintered bridges formed at both end portions of the joint sections in the longitudinal direction of the pieces of foil;

wherein the catalyst carrier has an exhaust gas entry side and an exhaust gas delivery side,

solder bonds are located at contact portions of ~~the piece of flat foil and~~ the piece of corrugated foil and the piece of flat foil or corrugated foil at the exhaust gas entry side; and

diffusion bonds are located at the contact portions of ~~the piece of flat foil and~~ the piece of corrugated foil and the piece of flat foil or corrugated foil at the exhaust gas delivery side.

Claim 13: (canceled).

14 (amended): A diffusion bonded metallic catalyst carrier according to claim 12,

wherein the honeycomb body comprises the piece of corrugated foil and the piece of flat foil, and

wherein the piece of corrugated foil at the exhaust gas entry side of the catalyst carrier has a wave form in a trapezoid shape and area of contact between the piece of flat foil and the trapezoid shape wave form of the piece of corrugated foil at the exhaust gas entry side is large, and the piece of corrugated foil at the exhaust gas delivery side of the catalyst carrier has a wave form configuration wherein area of contact between the piece of flat foil and the configuration of the wave form of the piece of corrugated foil at the exhaust gas delivery side is not large.

15 (amended): A diffusion bonded metallic catalyst carrier according to claim 12,

wherein the honeycomb body comprises the piece of corrugated foil and the piece of flat foil, and

wherein the piece of flat foil has a thickness which is not uniform, wherein the thickness of the piece of flat foil at the exhaust gas entry side of the catalyst carrier is large and the thickness of the piece of flat foil at exhaust gas delivery side of the catalyst carrier is small.

16 (previously presented): A method of manufacturing a diffusion bonded metallic catalyst carrier, the diffusion bonded metallic catalyst carrier comprising: a honeycomb body composed of a piece of corrugated foil made of heat-resistant stainless steel containing aluminum and a piece of flat foil or corrugated foil made of stainless steel, the piece of corrugated foil and the piece of flat foil or corrugated foil being alternately wound or laminated on each other; and an outer cylinder made of metal into which the honeycomb body is incorporated, the honeycomb body and the outer cylinder being integrated into one body by means of diffusion bonding,

the method of manufacturing the diffusion bonded metallic catalyst carrier comprising the step of selecting parameters so that $\boldsymbol{\lambda b}$, which is defined by

$$\boldsymbol{\lambda b} = C \times \boldsymbol{\delta f}^{-1} \times F^{1/2} \times Ra^{-1/2} \times T^{1/4} \times \exp(15000/T) \times b^{1/2}$$

under the condition where $7.52 \times 10^{9} \times \exp(-35000/T) \geq 8 \times$ Pout is satisfied, is in a range from 8 to 20,

wherein thickness of the foil is δf (m), an arithmetical mean deviation of asserted profile of the foil surface before diffusion bonding is Ra (m), back tension from winding is F (kgf), contact width of the piece of flat foil with the piece of corrugated foil or contact width of the piece of a first corrugated foil with the piece of a second corrugated foil is b (m),a heat treatment temperature is T (K), degree of vacuum is Pout (Pa), and the constant of proportion is C.

17 (previously presented): A method of manufacturing a diffusion bonded metallic catalyst carrier according to claim 16, wherein surface roughness Rac (m) of the foil in a width direction of the foil is used as a replacement for arithmetical mean deviation of asserted profile Ra (m).

18 (previously presented): A method of manufacturing a diffusion bonded metallic catalyst carrier according to claim 16, wherein arithmetical mean deviation of asserted profile Ra of the surface of the foil before diffusion bonding is 0.001 to 3.0 μm.

19 (previously presented): A method of manufacturing a diffusion bonded metallic catalyst carrier according to claim 16, wherein λb is in a range of from 14 to 18.

20 (previously presented): A method of manufacturing a diffusion bonded metallic catalyst carrier according to claim 16, wherein the constant of proportion $C = 6.8 \times 10^{-12}$.